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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

HANRAHAN, JOSEPH M.J.

ART UNIT	PAPER NUMBER
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1794

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,813	Applicant(s) LIDSTER ET AL.	
	Examiner JOSEPH M.J. HANRAHAN	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 25-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-32 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/08/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 1-24, drawn to a composition.

Group 2, claim(s) 25-32, drawn to a method.

2. The inventions listed as Groups 1 and 2 do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The two inventions lack unity a posteriori. The common technical feature in both groups is the use of calcium and ascorbic acid to preserve cut apples. This feature is known in the art (Ponting, et al., *Refrigerated Apple Slices: Preservative Effects of Ascorbic Acid, Calcium, and Sulfites*, Journal of Food Science, Vol. 37 (1972)).

3. During a telephone conversation with Gerald Oyen on February 27, 2009 a provisional election was made with traverse to prosecute the invention of Group 1, claims 1-24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 25-32 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. The examiner has required restriction between product and process claims. Where applicant elects claims directed to the product, and the product claims are subsequently found allowable, withdrawn process claims that depend from or otherwise require all the limitations of the allowable product claim will be considered for rejoinder. All claims directed to a nonelected process invention must require all the limitations of an allowable product claim for that process invention to be rejoined.

In the event of rejoinder, the requirement for restriction between the product claims and the rejoined process claims will be withdrawn, and the rejoined process claims will be fully examined for patentability in accordance with 37 CFR 1.104. Thus, to be allowable, the rejoined claims must meet all criteria for patentability including the requirements of 35 U.S.C. 101, 102, 103 and 112. Until all claims to the elected product are found allowable, an otherwise proper restriction requirement between product claims and process claims may be maintained. Withdrawn process claims that are not commensurate in scope with an allowable product claim will not be rejoined. See MPEP § 821.04(b). Additionally, in order to retain the right to rejoinder in accordance with the above policy, applicant is advised that the process claims should be amended during prosecution to require the limitations of the product claims. **Failure to do so may result in a loss of the right to**

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rejoinder. Further, note that the prohibition against double patenting rejections of 35 U.S.C. 121 does not apply where the restriction requirement is withdrawn by the examiner before the patent issues. See MPEP § 804.01.

Claim Objections

6. Claims 5 and 15 are objected to because the claim is not written in acceptable Markush form. See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925); MPEP 2173.05(h). The word "essentially" should not be used with a Markush Group. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1-6, 10-16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warren (US Pat. No. 5055313).

11. Warren teaches preserving cut apple slices with a solution containing ascorbic acid, calcium ions, magnesium ions, and citric acid (Col. 2, Lines 30, 55, and 61; Col. 3, Line 14). Warren does not teach the specific ratios and concentrations of components presently claimed in this application.

12. Determining the amount of each ingredient to be used is a matter of routine experimentation. *In re Antonie*, provides that “[a] particular parameter must be first recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation.” 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

13. The amounts of ascorbic acid, calcium ions, magnesium ions, and citric acid are result effective variables. Solutions of ascorbic acid, calcium ions, magnesium ions, and citric acid are well known in the art of plant preservation (particularly apple preservation)

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and achieve recognized results. The ascorbic acid functions as an antioxidant and protects the apple parts against oxidation (Col. 2, Lines 29-45). The calcium and magnesium ions function as enzyme inhibitors and retard the decomposition of the apple (Col. 2, Lines 46-65). The citric acid acts as an acidulant and functions as an antimicrobial agent (Col. 3, Lines 4-11).

14. It would have been obvious to a person skilled in the art at the time of invention to have modified the invention of Warren by routine experimentation to achieve a desired result. As stated in Warren, "adjustments in the amount of each ingredient may occur depending upon the plant part treated and the amount of storage time of the cut plant parts expected" (Col. 2, Line 69- Col. 3, Line 3).

15. Claims 7-9, 17-19, and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Warren (US Pat. No. 5055313) in view of Chen (US Pat. No. 5925395).

16. Regarding Claims 7-9 and 17-19, Warren teaches the limitations of Claims 1 and 10 from which, these claims depend as described above. Warren, however, does not specifically disclose the source of the calcium ions as calcium hydroxide or calcium carbonate. Chen teaches a preservative solution containing mixtures of calcium salts including calcium hydroxide and calcium carbonate (Chen Col. 2, Lines 62-63).

17. Regarding Claims 21-24, Warren does not teach the use of calcium chloride or calcium hydroxide but does teach the use of magnesium chloride (Warren Col.2, Line 62). Warren also does not teach the use of calcium chloride or ascorbic acid in the amount claimed and also does not teach the claimed pH range. Chen teaches a range of calcium

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salts of 0.2% to about 20% and range of ascorbic acid concentration of about 0.5% to about 15% (Chen Col. 3, Lines 44-54). Chen also teaches a pH range of 3.5 to 7.5 (Chen Col. 4, Lines 5-10). Further more Chen teaches a preservative solution containing mixtures of calcium salts including calcium hydroxide and calcium carbonate (Chen Col. 2, Lines 62-63).

18. Given the teachings of Chen and Warren, it would have been obvious to a person skilled in the art at the time of invention to have modified the teachings Warren with the teachings of Chen to arrive at the current invention. The ranges of compositions used to prepare the claimed preservative solution overlap with the ranges provided in Chen. The skilled artisan would have been able to arrive at the claimed invention through routine experimentation as explained above with reference to Claims 1-6, 10-16, and 20. The motivation to combine the references would have been to create a preservative solution that maintains the freshness, crispness, texture, appearance, color, moisture and flavor of the food product (Chen Col. 2, Lines 33-35). Even though Chen is directed to the preservation of cut vegetables and not cut apples, the two references are closely analogous because they both relate to the preservation of cut plant products using solutions containing ascorbic acid and calcium salts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSEPH M.J. HANRAHAN whose telephone number is (571) 270-7060. The examiner can normally be reached on M-F from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1794

/JOSEPH M.J. HANRAHAN/
Examiner, Art Unit 1794